

electrical connection between the source of the power and the lens in order to change the lens.

The variable focus lens of the present invention has a variety of applications, in addition to the application as an intraocular lens. For example, the variable focus lens can be used as a camera lens. The lens could be used as an alternative to or in conjunction with cameras having either a fixed lens, an adjustable lens, or a plurality of interchangeable lenses.

In accordance with the provisions of the patent statutes, the present invention has been described in what is considered to represent its preferred embodiment. However, it should be noted that the invention can be practiced otherwise than as specifically illustrated and described without departing from its spirit or scope.

What is claimed is:

1. An adjustable focus intraocular lens apparatus, for implantation into an eye, comprising:
  - a transparent lens body having a periphery which includes an expandable and contractible inner ring;
  - a mounting ring positioned adjacent to said periphery of said lens body, said mounting ring including an outer ring being substantially rigid with respect to the inner ring of said lens body; and
  - micrometer means coupling the outer ring of said mounting ring to the inner ring of said lens body, said micrometer means being responsive to an externally generated control signal for selectively changing at least one of the shape and the position of the inner ring of said lens body whereby when the lens apparatus is implanted into an eye and the control signal is generated outside the eye and transmitted to said micrometer means, said micrometer means responds to adjust the focus of the lens for power and astigmatism correction respectively.
2. The lens apparatus according to claim 1 wherein said micrometer means includes a linear positioning device connected between said outer ring and said inner ring.
3. An adjustable focus intraocular lens apparatus, for implantation into an eye, comprising:
  - a transparent lens body having a periphery;
  - an adjustable circumference inner ring attached to said periphery of said lens body;
  - a plurality of micromotor means spaced about and coupled to said inner ring, and responsive to an externally generated control signal for selectively changing the circumferential length of said inner ring whereby when the lens apparatus is implanted in an eye and the control signal is generated outside the eye and transmitted to said micromotor means,

said micromotor means respond to adjust the shape of the lens for power and astigmatism correction; and

- a substantially rigid outer ring, wherein each said micromotor means includes a linear positioning device connected between said outer ring and said inner ring for selectively moving said inner ring toward and away from said outer ring.

4. The lens apparatus according to claim 3 wherein said micromotor means have a source of potential energy responsive to said control signal for actuating said micromotor means and moving said inner ring with respect to said outer ring.

5. An adjustable focus intraocular lens apparatus, for implantation into an eye comprising:

- a transparent lens body having a periphery and a central axis;
- a mounting ring extending about said periphery of said lens body; and
- a plurality of micromotor means spaced equally about and attached to said mounting ring and coupled to said periphery of said lens body, each said micromotor means being responsive to an external control signal for selectively changing at least one of a circumferential length and an axial position along said central axis of an associated portion of said periphery of said lens body relative to a circumferential length and an axial position of another portion of said lens body whereby when the lens apparatus is implanted into an eye and the control signal is generated outside the eye and transmitted to said micromotor means, said micromotor means respond to adjust the lens for power and astigmatism correction.

6. The lens apparatus according to claim 5 wherein said mounting ring includes a substantially rigid outer ring, said periphery includes an expandable and contractible inner ring, each said micromotor means being attached to said outer ring and coupled to said inner ring for moving said inner ring relative to said outer ring.

7. The lens apparatus according to claim 6 wherein each said micromotor means has a body attached to one of said inner and outer rings, a piston slidably positioned in a cylinder cavity formed in said micromotor means body, and a rod connected between the other one of said inner and outer rings and said piston being responsive to a source of energy triggered by said control signal for moving said inner ring relative to said outer ring.

\* \* \* \* \*